Before the
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE
WASHINGTON, D.C.

In re	)	
	)	
United States Spectrum Management	)	Docket No. 040127027-4027-01
Policy for the 21st Century	)	
	)	
Comments in Response to	)	
Notice of Inquiry	)	

To: Assistant Secretary for Communications and Information, U.S. Department of Commerce
Administrator, National Telecommunications and Information Administration

COMMENTS OF CINGULAR WIRELESS LLC

Cingular Wireless LLC ("Cingular")[1] hereby offers its comments in response to the *Notice of Inquiry* issued by the National Telecommunications and Information Administration of the U.S. Department of Commerce ("NTIA") in the above-captioned proceeding.[2]

I. Introduction

In his *Presidential Memorandum on Spectrum Policy in the 21st Century*,[3] President Bush established a "Spectrum Policy Initiative" and committed his Administration to "promoting

[1] Cingular, through various subsidiaries and affiliates, constructs, operates and holds interests in numerous wireless telecommunications systems throughout the United States. The company holds cellular service and personal communications services (PCS) licenses in 43 of the 50 states and in 87 of the top 100 metropolitan areas. Cingular is jointly controlled by BellSouth Corporation and SBC Communications Inc.

[2] *United States Spectrum Management for the 21st Century*, *Notice of Inquiry*, 69 FR 4923 (February 2, 2004) ("*Notice*").

[3] *Presidential Memorandum for the Heads of Executive Departments and Agencies on Spectrum Policy for the 21st Century*, 69 FR 1568 (released by the White House Office of the Press Secretary on June 5, 2003 and published in the Federal Register on Jan. 9, 2004) ("*Presidential Memorandum*").

the development and implementation of a U.S. spectrum policy for the 21st century that will: (a) foster economic growth; (b) ensure our national and homeland security; (c) maintain U.S. global leadership in communications technology development and services; and (d) satisfy other vital U.S. needs in areas such as public safety, scientific research, Federal transportation infrastructure, and law enforcement."[4] In accordance with the directives contained in the *Presidential Memorandum*, NTIA issued the *Notice*, which solicits comments as part of a comprehensive review of the current state of U.S. spectrum management policy. The purpose of the *Notice* is to develop legislative and other recommendations for advancing the following policy objectives:

- modernization and improvement of U.S. spectrum management;
- creation of incentives for achieving more efficient and beneficial use of the spectrum, and provision of a higher degree of predictability and certainty in the spectrum management process as it applies to incumbent users;
- development of policy tools to streamline the deployment of new and expanded services and technologies, while preserving national and homeland security and public safety, and encouraging scientific research; and
- development of means to address the critical spectrum needs of national security and homeland security, public safety, Federal transportation infrastructure, and science.

In the *Notice*, NTIA asks a variety of questions involving the organizational, procedural and policy aspects of our nation's spectrum management policies, with a view toward enhancing Federal government, State, local and private sector spectrum use. Cingular supports the goals of the *Presidential Memorandum* and welcomes this opportunity to offer its views to NTIA on several of the issues raised in the *Notice*. As a major participant in the most competitive sector

[4] *Id.*

of the telecommunications industry – the commercial mobile radio service (”CMRS”) sector – Cingular is well-positioned to offer comments on the best ways to achieve the stated goals.

II. Key Principles of Spectrum Policy

The task assigned by the *Presidential Memorandum* is not simple. As NTIA begins its review of spectrum management in the United States, it is important for NTIA to remain mindful of certain basic principles. Cingular believes that the following “key principles of spectrum policy” should guide this proceeding:

- Spectrum policy should seek to maximize the efficient use of the electromagnetic spectrum.
- Spectrum policy should create a reliable and predictable regulatory environment in which incumbent users – whether they are government, private or commercial – are protected from interference.
- Spectrum policy should promote and facilitate the development and deployment of new services and applications, and the expansion of existing ones.

The *Notice* seeks comment on the structure of the government’s system for spectrum management. Cingular does not perceive a great need to alter the existing structure at this time – wherein spectrum management responsibilities are split among NTIA, the Federal Communications Commission (“FCC”) and the U.S. Department of State. Whatever spectrum management structure is put in place, however, Cingular wishes to emphasize that the above-mentioned key principles must be followed.

III. Fostering Competitive Markets Will Most Effectively Promote Efficient Use of Spectrum.

In the market for CMRS services, making efficient use of one's spectrum is an indispensable ingredient for survival. Likewise, in any well-functioning, competitive market (*i.e.*, one in which behavior is driven by market incentives), service providers have every reason to maximize spectrum efficiency. The marketplace dynamic for spectrum efficiency – in which increased efficiency will lead to higher profits – operates as a more powerful force than any regulatory requirements. Indeed, in competitive markets like CMRS, imposition of any new regulatory mechanism to ensure efficient use of spectrum will only interfere with the smooth functioning of the market.

As a general matter, spectrum should be allocated to its most efficient use unless significant public policy goals, such as public safety, would be jeopardized.[5] In addition, when spectrum is being allocated, the public interest is served best by maximizing the flexibility of users to employ licensed spectrum in the most efficient manner, consistent with interference protection requirements. It is unwise, however, to attempt to solve an inefficient existing use of licensed spectrum by simply layering on new permitted uses under the guise of a "flexible use" policy.[6] If spectrum is to be subject to flexible use, the degree of flexibility should be made clear at the time the allocation is made. In this way, all potential bidders in an auction of licenses to

[5] The FCC recognized that ensuring spectrum efficiency sometimes requires spectrum reallocation when it recently reallocated 30 MHz of spectrum in the 2 GHz band from mobile satellite services to terrestrially-based advanced wireless services. *See Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems*, ET Docket No. 00-258, *Third Report and Order, Third Notice of Proposed Rulemaking and Second Memorandum Opinion and Order*, 18 FCC Rcd 2223 (2003)

[6] As Cingular has argued before the FCC, it was unwise and impermissible to grant mobile satellite service licensees the right to make terrestrial use of their satellite authorizations. *See* Cingular Wireless LLC, Petition for Reconsideration in IB Docket No. 01-185, at 1 (filed July 7, 2003).

use that spectrum will have complete information as to the spectrum's potential, and the auction winner will more likely be the party with the best and most efficient use for the spectrum.

The *Notice* asks how the term "spectrum efficiency" should be defined, and what metrics should be used to apply the definition. Defining this term, however, may not be productive. Spectrum efficiency often means entirely different things depending on the service or use being discussed. For example, a definition that relies upon the number of subscribers that a carrier served per licensed MHz over a particular geography would be meaningless in analyzing the efficiency of a non-commercial spectrum use or of one that uses a point-to-point architecture. Spectrum efficiency is best encouraged not by defining it through regulatory means, but instead by encouraging competitive markets, where market forces will naturally drive market participants to more efficient uses of their spectrum assets.

NTIA also asks how receiver performance standards can be employed to increase spectrum efficiency and minimize harmful interference. Commercial wireless receivers already are engineered to rigorous standards. In order to maintain their market positions, carriers like Cingular must be able to offer their customers interference-free service to the maximum extent possible. Competitive pressures drive CMRS carriers to demand that equipment manufacturers incorporate robust noise filters in commercial wireless receivers. Adopting new receiver performance standards would therefore not be useful with respect to equipment used in competitive services. They may, however, be of some use in bands in which competition does not exist to naturally drive the equipment market to produce interference-resistant receivers (*e.g.*, in bands allocated to public safety radio communications).

IV. Spectrum Management Policies Must Protect Incumbent Spectrum Users From Interference.

NTIA's desire (as stated in the second objective articulated in the *Notice*) to "provide a higher degree of predictability and certainty in the spectrum management process as it applies to incumbent users" is well placed. A predictable and reliable regulatory environment is critical to the public interest because, to the extent that uncertainties exist, investors and carriers are less willing to commit capital, thereby limiting services offered to the public.

As the FCC's Spectrum Policy Task Force stated in its November 2002 report, spectrum management policy "must be based on clear definitions of the rights and responsibilities of both licensed and unlicensed spectrum users, particularly with respect to interference and interference protection."[7] Cingular is concerned about the initiation of recent FCC proceedings that could result in the adoption of new rules and policies that would impose substantial additional uncertainties regarding interference in CMRS spectrum bands that were designed for exclusive use licensees (*i.e.*, operation by a single entity in a defined geographic area). Specifically, the FCC is considering rules that would enable unlicensed "underlays" or "easements" that could introduce new interference to services provided by exclusive use licenses.[8] For the reasons detailed below, any recommendations on spectrum management policy that arise from this proceeding should clearly state that exclusive use licensees should be free from additional interference threats.

Interference Protection Promotes Economic Growth. One of the primary reasons why Congress created the FCC and its predecessor, the Federal Radio Commission, was to end the

[7] Spectrum Policy Task Force, ET Docket No. 02-135, Report (rel. Nov. 15, 2002) at 3.

[8] *See, e.g., Establishment of an Interference Temperature Metric to Quantify and Manage Interference and to Expand Available Unlicensed Operation in Certain Fixed, Mobile and Satellite Frequency Bands*, ET Docket No. 03-237, *Notice of Inquiry and Notice of Proposed Rule Making*, FCC 03-289 (rel. November 28, 2003).

rampant and unpredictable interference that resulted from an unregulated, uncoordinated environment in which anyone could use spectrum of their own choosing.[9] The establishment of a predictable regulatory environment made possible the development of new technologies that have driven innovation and economic growth in the communications sector for decades. In turn, new communications technologies have brought incalculable benefits to society, both by creating new ways for people to obtain information and to communicate with one another, and by spurring new products and services that allowed us all to be more productive. This phenomenon would not have happened if the users of licensed spectrum were not protected from interference.

In the CMRS industry, incumbent carriers have invested more than $134 billion in their networks, employed more than 187,000 people and brought valuable telecommunications services to the over 156 million subscribers.[10] As a result of these investments, CMRS networks have continued to expand as carriers have offered an ever-increasing array of innovative wireless products and services, bringing prices down and delivering "a high level of competition for mobile telephone consumers."[11] The CMRS industry has evolved into the most competitive sector in the telecommunications industry, but if CMRS carriers did not enjoy interference protection through operation of the FCC's rules, these benefits would not have been realized.

Consumers Will Suffer If Licensees Are Not Protected From Interference. Protection from interference is essential to ensure that incumbent spectrum users continue to have access to

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[9] *See generally* Glen O. Robinson, *The Federal Communications Act: An Essay on Origins and Regulatory Purpose*, A LEGISLATIVE HISTORY OF THE COMMUNICATIONS ACT OF 1934) 3, 8-11(Max D. Paglin, ed., 1989); J. Roger Wollenberg, *The FCC as Arbiter of "The Public Interest, Convenience, and Necessity,"* in LEGISLATIVE HISTORY at 61, 61-70; *National Broadcasting Co. v. United States*, 319 U.S. 190, 212 (1943) ("With everybody on the air, nobody could be heard.").

[10] *See Semi-Annual Wireless Industry Survey*, prepared by the Cellular Telecommunications & Internet Association, and available at http://www.wow-com.com/pdf/MidYear_2003_survey.pdf.

the capital necessary for additional investment in their physical networks and in the development of innovative new products and services. Furthermore, the customers of incumbent spectrum users would suffer if regulations allow unlicensed services to be deployed as underlay uses in a licensed band. Permitting underlay uses would inevitably increase the noise floor over which licensed services must operate, adversely affecting the quality of service provided to consumers of those licensed services.

Simple Fairness Requires That Incumbents Be Protected From Interference. When the FCC granted the CMRS licenses in use today, it granted those licensees the "exclusive use" of certain frequencies over a certain geography. Billions of dollars have been invested in wireless networks in reliance on the notion that the exclusivity granted would remain just that – exclusive. It would violate the most basic notions of equity and fairness for lawmakers and/or regulators to enact new rules that would allow underlay services or "easements" to encroach on licensed services in exclusive use bands.

V. Spectrum Management Policies Can Facilitate New Spectrum Uses Without Compromising Existing Services

Over the past decade, pursuant to changes in the Communications Act enacted through Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993,[12] the method through which spectrum is assigned has shifted from hearings and lotteries to auctions. As was intended, assigning spectrum licenses through competitive bidding has produced huge benefits for taxpayers, consumers and the wireless industry alike: taxpayers benefit from the U.S Treasury's recovery of a portion of the value of the spectrum resource; consumers see new technologies,

[11] *Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, WT Docket No. 02-379, *Eighth Report*, FCC 03-150 (July 14, 2003), at ¶ 57.

[12] Omnibus Budget Reconciliation Act of 1993, Pub. L. 103-66, § 6002(b), 107 Stat. 312, 392 (1993).

products and services sooner because auctions place spectrum in the hands of parties with the highest valued use for it and therefore the greatest incentive to put it to use quickly; and the wireless industry is afforded a reliable, market-based mechanism for gaining access to spectrum more quickly.

The process by which commercial spectrum is assigned is not in need of major reform. It is working as intended, and working well. As detailed below, however, some spectrum allocation policies are in need of reform and attention must be paid to ensure that spectrum assignment policies are applied in a consistent manner. NTIA should carefully consider these concerns and make the following recommendations.

A. Allocation Policy Regarding Commercial Spectrum For Unlicensed Services Is In Need of Reform.

No one would dispute that government decisions regarding spectrum allocations should be based principally on sound policy considerations and not on politics or popular trends. In its recent actions promoting unlicensed services, however, it seems that the FCC has forgotten this basic premise. Certainly, unlicensed applications such as WiFi are growing rapidly, and unlicensed services have a valuable place in the wireless landscape. But the FCC seems lately to have committed itself to promoting unlicensed services even if doing so reduces the ability of licensed service providers to innovate and improve service quality to their customers.

As noted above, by awarding exclusive use licenses to CMRS providers, the FCC provided licensees with incentives to invest capital in infrastructure and to spend on development of innovative new products and services. Armed with the knowledge that their licenses protect them from interference from other users on the same frequencies, CMRS licensees have been

able to access capital far more easily than would have been the case in the absence of that protection. Future spectrum policy decisions should not weaken this protection.

The FCC has recently sought to promote unlicensed services through new allocations, the creation of underlays and/or easements, and the establishment of new "interference temperature" rules.[13] To the extent these efforts hinder the continuing significant growth and innovation taking place in CMRS services, they would come at a tremendous cost. In making decisions in these areas, the FCC should conduct meaningful cost-benefit analyses taking into account the potential destructive effects that these changes will have on licensed services.

The FCC's previous CMRS spectrum allocation decisions have created a fiercely competitive market and brought countless benefits to consumers. No matter how fashionable it may be to promote unlicensed services, policymakers should not undercut these previous decisions by damaging a competitive industry that it worked so hard to nurture.

B. A Mix of Licensed and Unlicensed Spectrum Should Be Allocated.

The available spectrum allocable for non-governmental use can and should be allocated to a combination of licensed and unlicensed uses. It is vitally important, however, that these two uses not be intermingled. It has yet to be demonstrated that unlicensed uses can exist in licensed frequency bands without causing harmful interference to licensed services. As it moves ahead with this effort to reform spectrum management policy, NTIA and other policymakers should guard against actions that would risk significant degradation of the spectrum environment in which licensed services are provided.

A key element of spectrum allocation policy going forward should be a continuation of the policy of licensing most of the spectrum below 5 GHz on an exclusive use basis. The CMRS

[13] The term "interference temperature" is a newly coined term and has never been defined in sufficient engineering terms.

experience proves that such an approach provides licensees with the incentive to invest in infrastructure and to innovate, and gives the capital markets comfort in knowing that licensees will be free from interference from within their bands as they roll out their business plans. The resulting economic gains have been enormous, and it would be foolhardy to jettison this approach in favor of unproven unlicensed technologies that claim they can co-exist with licensed services as underlay operations in licensed bands.

Unlicensed underlays would threaten not only the business plans of licensed service providers, but also limit the flexibility that licensees have in deploying technology to meet consumers needs. The potential for interference that these operations bring represents a danger to the productivity and enjoyment that the wide variety of licensed services (not just CMRS services) has brought to all Americans. Therefore, separate spectrum should be set aside for unlicensed operations, primarily in spectrum above 5 GHz.

C. Spectrum Assignment Policy Must Be Applied Consistently.

In contrast to spectrum allocation policy, the policies governing the assignment of spectrum licenses for commercial services do not require major reform. It is the application of these policies that needs to be addressed. Spectrum assignment policies are not always consistently applied by the FCC. For example, the FCC concluded correctly that Section 309(j) of the Communications Act requires it to accept multiple applications for Multichannel Video Distribution and Data Service licenses and to put those licenses up for bid in an auction if mutually exclusive applications are filed,[14] yet it wrongly decided to allow Mobile Satellite Service licensees to provide a new terrestrial service without subjecting them to the Section

[14] *See Amendment of the Commission's Rules to Authorize Subsidiary Terrestrial Use of the 12.2-12.7 GHz Band by Direct Broadcast Satellite Licensees and Their Affiliates*, ET Docket 98-206, *Memorandum Opinion and Order and Second Report and Order*, 17 FCC Rcd 9614 (2002) at ¶¶ 237-248.

309(j) auction process.[15] Consistent application of spectrum policies should be a guiding principle that is included in any recommendations that emanate from the Spectrum Policy Initiative.

VI. Congress Should Enact Legislation To Use Auction Revenues To Fund The Relocation of Government Spectrum Operations.

In OBRA-93, Congress ordered NTIA to identify for reallocation to non-governmental use bands of spectrum that were allocated for use by the U.S. military and other Federal government users. Pursuant to this mandate, NTIA in 1995 identified the 1710-1755 MHz band for transfer from exclusive use by the Federal government to mixed use.[16] Subsequently, the FCC allocated 90 MHz of spectrum – pairing this band with the 2110-2150 and 2150-2155 MHz bands – for advanced (or third generation ("3G")) wireless services.[17] The FCC recently adopted service rules for this spectrum,[18] and appears poised to hold an auction for licenses to use these frequencies in the not-too-distant future.

The FCC noted, when it adopted service rules for advanced wireless services in this band, that its action

> bring[s] us closer to our goals of achieving the universal availability of broadband access and increasing competition in the provision of such broadband services both in terms of the types of services offered and in the technologies utilized to

[15] *See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, IB Docket No. 01-185, *Report and Order and Notice of Proposed Rulemaking*, 18 FCC Rcd 1962 (2003), *appeal pending, AT&T Wireless Services, Inc. and Cellco Partnership d/b/a Verizon Wireless v. FCC, No. 03-1191 (D.C. Cir. filed July 8, 2003).*

[16] *See Spectrum Reallocation Final Report, Response to Title VI – Omnibus Budget Reconciliation Act of 1993, NTIA Special Publication 95-32 (February 1995).*

[17] *See Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems*, ET Docket No. 00-258, *Second Report and Order*, 17 FCC Rcd 23193 (2002).

[18] *See Service Rules for Advanced Wireless Services in the 1.7 GHZ and 2.1 GHz Bands*, WT Docket No. 02-353, *Report and Order*, FCC 03-251, 31 CR 96 (rel. November 25, 2003).

> provide those services. The wide spread deployment of broadband will bring new services to consumers, stimulate economic activity, improve national productivity, and advance many other objectives – such as improving education, and advancing economic opportunity for more Americans.[19]

The orderly and timely relocation of Federal government communications operations from the 1710-1755 MHz band will greatly enhance the opportunity to achieve these goals sooner rather than later. The Secretary of Commerce should continue to include in the reports required under Section 5 of the *Presidential Memorandum* a recommendation that the President propose the enactment of legislation that would establish a trust fund from which the costs of relocation of Federal government spectrum users from the 1710-1755 MHz band would be paid. A portion of the revenues derived from the FCC's auction of 3G licenses in the 1.7 GHz and 2.1 GHz bands could be used to furnish the necessary monies to accomplish this task in an orderly and expeditious manner. The trust fund mechanism would afford a systematic way to ensure that the relocation of Federal government spectrum users occurs smoothly and without undue delay. In addition, this approach would be far preferable to requiring the auction winners to pay relocation costs, because that would introduce substantial uncertainties into the auction process and likely would negatively affect the values that bidders in the auction would place on the 3G licenses.

The establishment of a Federal government spectrum relocation trust fund is the best way to achieve, at the earliest possible date, the goals of expanding the availability of broadband access and increasing competition in the provision of broadband services.

[19] *Id*. at ¶ 2.

VII. Conclusion.

For the foregoing reasons, NTIA and the other participants in the Spectrum Policy Initiative should:

- follow the key principles of spectrum management outlined above;
- recognize that efficient spectrum use will be best promoted by fostering competitive markets;
- ensure a predictable and reliable regulatory environment that protects incumbent licensees from interference;
- adopt policies that foster new spectrum-based services without undercutting the competitive markets that currently exist; and
- recommend that the President propose the enactment of legislation that would establish a trust fund from which the costs of relocation of Federal government spectrum users from the 1710-1755 MHz band would be paid.

Respectfully submitted,

CINGULAR WIRELESS LLC

By: /s/ M. Robert Sutherland

J. R. Carbonell
Carol L. Tacker
M. Robert Sutherland
5565 Glenridge Connector
Suite 1700
Atlanta, GA 30342
(404) 236-6364

Its Attorneys

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